CLAIMS

What is claimed is:

1. A radio-frequency identification (RFID) tag including:

a non-volatile memory;

an oscillator, coupled to the non-volatile memory, to receive an oscillator calibration value from the non-volatile memory, and to generate an oscillation frequency signal within the RFID tag utilizing the oscillator calibration value;

a tag controller to generate a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a received radio-frequency signal from an RFID reader; and

a modulator to backscatter modulate a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal.

2. The tag of claim 1, wherein the tag controller is to receive the oscillator calibration value in association with a write command at the RFID tag, and to write the oscillator calibration value to the non-volatile memory responsive to the write command.

3. The tag of claim 2, wherein the write command is received via a test signal supplied to an RFID integrated circuit of the RFID tag.

4. The tag of claim 2, wherein the write command is received within via a further radio-frequency signal supplied to the RFID tag by the RFID reader.

5. The tag of claim 1, wherein the oscillation frequency signal comprises a clock signal recovered from the received radio-frequency signal.

6. The tag of claim 1, wherein the command data is included within a protocol communication received at the RFID tag from the RFID reader.

7. The tag of claim 6, wherein the command data specifies a backscatter rate applicable to the first radio-frequency signal.

8. The tag of claim 6, including a demodulator to demodulate the received radio-frequency signal received from the RFID reader, to extract the command data therefrom, and to communicate the command data to a command decoder of the tag controller.

9. The tag of claim 6, wherein the command decoder is to communicate a command, corresponding to the command data, to a tag state machine of the tag controller, the tag state machine to generate the command signal.

10. The tag of claim 1, wherein the tag controller is to provide the command signal to a clock generation circuit so as to control a frequency of a modulation clock signal provided by the clock generation circuit to the modulator of the RFID tag.

11. The tag of claim 1, wherein the tag controller is to provide the command signal to the modulator of the RFID tag so as to control modulation of the first radio-frequency signal.

12. The tag of claim 1, wherein the tag controller is to select the oscillator calibration value, from one of a plurality of oscillator calibration values stored within the non-volatile memory, to be received by the oscillator.

13. The tag of claim 1, wherein the tag is to store the oscillator calibration value within the non-volatile memory responsive to a programming operation.

14. The tag of claim 13, wherein the programming operation includes providing a command and an associated update value to the RFID tag

15. The tag of claim 13, wherein the programming operation is performed as part of a test operation with respect to an RFID circuit of the RFID tag.

16. A method to backscatter modulate a first radio-frequency signal from a radio-frequency identification (RFID) tag, the method including:

retrieving an oscillator calibration value from a non-volatile memory associated with the RFID tag;

generating an oscillation frequency signal within an RFID tag, the generating of the oscillation frequency signal being performed utilizing the oscillator calibration value;

generating a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a second radio-frequency signal from an RFID reader; and

backscatter modulating the first radio-frequency signal in accordance with both the oscillation frequency signal and the command signal.

17. The method of claim 16, including receiving the oscillator calibration value in association with a write command at the RFID tag, and writing the oscillator calibration value to the non-volatile memory responsive to the write command.

18. The method of claim 17, wherein the write command is received via a test signal supplied to an RFID integrated circuit of the RFID tag.

19. The method of claim 17, wherein the write command is received within via a third radio-frequency signal supplied to the RFID tag by the RFID reader.

20. The method of claim 16, wherein the oscillation frequency signal comprises a clock signal recovered from the second radio-frequency signal received from the RFID reader.

21. The method of claim 16, wherein the command data is included within a protocol communication received at the RFID tag from the RFID reader.

22. The method of claim 21, wherein the command data specifies a backscatter rate applicable to the first radio-frequency signal.

23. The method of claim 21, including demodulating the second radio-frequency signal received from the RFID reader to extract the command data therefrom, and communicating the command data to a command decoder within the RFID tag.

24. The method of claim 21, including communicating a command, corresponding to the command data, from the command decoder to a tag state machine, the tag state machine to generate the command signal.

25. The method of claim 16, wherein the command signal is provided to a clock generation circuit so as to control a frequency of a modulation clock signal provided by the clock generation circuit to a modulator of the RFID tag.

26. The method of claim 16, wherein the command signal is provided to a modulator of the RFID tag so as to control modulation of the first radio-frequency signal.

27. The method of claim 16, wherein the retrieving of the oscillator calibration value from the non-volatile memory includes selecting the oscillator calibration value from one of a plurality of oscillator calibration values stored within the non-volatile memory.

28. The method of claim 16, including storing the calibration value within the non-volatile memory utilizing a programming operation.

29. The method of claim 28, wherein the programming operation includes providing a command and an associated update value to the RFID circuit.

30. The method of claim 28, wherein the programming operation is performed as part of a test operation with respect to the RFID circuit.

31. A radio-frequency identification (RFID) tag including:

a non-volatile memory means;

first means, coupled to the non-volatile memory means, for receiving an oscillator calibration value from the non-volatile memory, and for generating an oscillation frequency signal within the RFID tag utilizing the oscillator calibration value;

second means for generating a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a received radio-frequency signal from an RFID reader; and

third means for backscatter modulating a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal.

32. The tag of claim 31, wherein the second means is for receiving the oscillator calibration value in association with a write command at the RFID tag, and for writing the oscillator calibration value to the non-volatile memory means responsive to the write command.

33. A machine-readable medium storing a description of a circuit, said circuit comprising:

an oscillator, operatively to be coupled to a non-volatile memory, to receive an oscillator calibration value from the non-volatile memory, and to generate an oscillation frequency signal within an RFID tag utilizing the oscillator calibration value;

a tag controller to generate a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a received radio-

frequency signal from an RFID reader; and

a modulator to backscatter modulate a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal.

34. The machine-readable medium of claim 33, wherein the description comprises a behavioral level description of the circuit.

35. The machine-readable medium of claim 34, wherein the behavioral level description is compatible with a VHDL format.

36. The machine-readable medium of claim 34, wherein the behavioral level description is compatible with a Verilog format.

37. The machine-readable medium of claim 33, wherein the description comprises a register transfer level netlist.

38. The machine-readable medium of claim 33, wherein the description comprises a transistor level netlist.